DESCRIPTIONS OF SIX NEW SPECIES OF SHELLS AND OF *LEPTOMYA LINTEA*, HUTTON, FROM NEW ZEALAND.

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PLATE XVIII.

Corneocyclas Aucklandica, n.sp. Pl. XVIII, Figs. 7–7*c*.

Shell small, inequilateral, oval, and somewhat inflated. Beaks not prominent, rounded, situate at the posterior third; prodissoconch smooth, convex, passing without strong demarcation into the adult valves. Anterior end convex, dorsal margin nearly straight, slightly descending. Posterior end much shorter, regularly rounded. Basal margin broadly convex. Sculpture consists of very fine concentric striæ. Colour light yellow; interior slightly whitish. Hinge-plate narrow. Right valve with paired anterior and posterior laterals, two cardinals, the anterior slender, broadly V-shaped, the posterior stouter, elongately triangular, situate partly below and behind the anterior cardinal. Left valve with single anterior and posterior laterals, two cardinals, one in front of the other, the anterior tooth stouter, hook-shaped, and the posterior very slender, directed backwards. Ligament small, inset. Length 3·5, height 2·75, diam. 2 mm. (One of the largest specimens.)

Hab.—The specimens used as type were collected many years back by Mr. Musson in a pond at Parnell, Auckland. Other localities are: Ohaupo (C. Musson); Otaki Gorge (H. B. Preston); Heathcote Estuary, near Christchurch, in slightly brackish water (H. S.).

Type in my collection. This species never attains the size of *C. Novæ-zelandiæ*. From young specimens of the latter it may be distinguished by being more inflated and by having the beaks more posteriorly. From *C. Hodgkini* it is separated by the somewhat larger size, the more oval form, and by being more inequilateral.

Most of the specimens have above and behind a ferrugineous coating.

Venericardia (Pleuromeris) Bollonsi, n.sp. Pl. XVIII, Figs. 8–8*b*.

Shell small, ovate, solid, slightly inequilateral, and with nodulous radiate ribs. Beaks approximate, but little anterior, high and erect, prosogyrate, incurved; protoconch very small, pointed and smooth. Anterior end with the dorsal margin descending and slightly concave, thence subangularly rounded; posterior end sharply convex, dorsal margin descending, long, and a little convex, basal margin regularly and broadly rounded. Lunule subcordate, finely striated. Escutcheon lanceolate, long and narrow, minutely striate, bounded by a carina. Sculpture: 14 strong radial beaded ribs with slightly broader interspaces; numerous concentric ridges, more prominent distally and on the base. Colour brown, much lighter towards the beaks. Interior white, porcellanous, margins strongly fluted. Hinge solid, right valve with a stout triangular central cardinal, which is laterally microscopically striate, anterior and posterior cardinals not well developed, the anterior lateral tooth is distinct, the posterior very

feeble; left valve with two divergent cardinals, the anterior stouter and triangular; a large lamelliform and marginal lateral tooth is present, which is connected above with the posterior cardinal, the anterior lateral much less distinct, elongated and distant. Ligament very short. The adductor scars are oval, distinct, the anterior deeper. Pallial line simple and entire. Length 9, height 8, diam. 4·5 mm.

Hab.—A number of valves were obtained by Captain J. Bollons in 18 fathoms, Port Pegasus, Stewart Island. A few valves were also gathered by Mr. A. Hamilton when dredging off Otago Heads.

Type in my collection. This species is nearest related to our *V. corbis*, Phil., and *V. lutea*, Hutton. The former is usually much smaller, shorter and more triangular, with 10 to 11 costæ, broader than the interspaces. *V. lutea* is sometimes found twice as large, but by comparing specimens of the same size it proves to be more oval, the ribs finer or more numerous, about 16, interspaces narrower than the ribs, inside brown.

It gives me great pleasure to unite the name of Captain J. Bollons with the species. It is to his great interest in conchology and his indefatigable energy that we owe so many interesting discoveries, and his liberality and readiness in procuring specimens for study are really inexhaustible.

Tellina (Angulus) Spenceri, n.sp. Pl. XVIII, Figs. 9–9*b*.

Shell elongately oval, thin, compressed, rostrate and but slightly flexuous posteriorly, subequilateral, with fine concentric striæ. Beaks small, approximate, sharply pointed, smooth and shining, a little anterior. Anterior end regularly rounded, nearly straight dorsally, with a slight fold from the beaks to a little above the middle. Posterior end rostrate, with a distinctly raised fold from the beaks towards the posterior angle, slightly flexed to the right; the dorsal margin excavate below the ligament, descending straight to the rostrum, and slightly sinuate below it. Basal margin broadly rounded, somewhat straightened in the middle. Sculpture consists of close and fine concentric striæ with distinct periods of rest; the striæ are more distinct and slightly raised on both ends, inconspicuous in the centre. Very faint and distant radiate lines are visible under a good lens. Epidermis very thin, light yellowish, easily rubbed off. Colour yellowish-white, darker on and above the posterior fold. Interior of valves white, porcellanous; margins smooth. Hinge: right valve with a central triangular and bifid cardinal, a second in front of it, which is a little smaller and oblique; close and parallel to it is a distinct lateral tooth; a trace of a posterior lateral is mostly present, situate behind the nympha, the latter being rather short. Left valve with a posterior, thin and very oblique, and a central, trigonal, bifid cardinal. The ligament is rather short and high. Anterior adductor scars oval, posterior scars almost round and larger. Pallial sinus large, broadly triangular, the highest point near the middle of the antero-posterior axis, thence descending to within a short distance of the anterior adductor scar; the ventral part coalescent with the pallial line, which is parallel to the ventral

margin. A radial line passes from the beaks towards the margin behind the anterior adductor scar, and two posteriorly, all of which, however, are not very conspicuous. Length 45, height 25, diameter 10 mm.

Hab.—The species was discovered by Mr. Charles Spencer, of Auckland, on the beach at Opotiki, east coast of the North Island. Later on I found it washed up on New Brighton beach, near Christchurch, dredged it in 6 fathoms in Akaroa harbour, and lately Captain J. Bollons found specimens washed up after a gale at Hicks Bay, north-west of East Cape.

Type in my collection. Named, in compliance with the wish of the late Captain F. W. Hutton, in honour of Mr. C. Spencer, a keen collector and observer of molluscan life, who also very kindly supplied a photograph of the species for reproduction.

Leptomya linteа (Hutton). Pl. XVIII, Figs. 10–10*c*.

Tellina decussata, Lamk.: Hutton, Cat. Mar. Moll. N. Zeal., 1873, p. 67, *non* Lamk.

Tellina lintea, Hutton, l.c., p. 67.

Tellina subovata, Sow.: Hutton, l.c., p. 67; Journ. de Conch., 1878, p. 47; Man. N. Zeal. Moll., 1880, p. 144; P.L.S. N.S. Wales, vol. ix, p. 521, *non* Sowerby.

Tellina Strangei, Desh.: Hutton, Journ. de Conch., 1878, p. 47; Man. N. Zeal. Moll., 1880, p. 144; Plioc. Moll. N. Zeal. in Macleay Mem. Vol., 1893, p. 80; Index Faunæ Novæ Zealandiæ, 1904, p. 91, *non* Deshayes.

Tellina retiaria, Hutton: Trans. N. Zeal. Inst., vol. xvii, 1885, p. 322.

Hutton's diagnosis runs as follows:—"Oval, thin, pellucid, very finely concentrically and transversely striated; anterior end rounded, posterior end longer, sub-angular, scarcely folded; right valve with two and left valve with one cardinal tooth; lateral teeth obsolete. White. Height ·6; length ·82 (= 15·5 × 21 mm.). Stewart's Island."

The following emendations are here offered:—The shell is more or less inequilateral, the beaks anterior. Sculpture consists of fine, subequidistant concentric striæ with better marked periods of rest, sometimes lamellar on the posterior end, where a distinct fold runs down from the beaks; this concentric sculpture is reticulated by exceedingly fine and close-set radiate striæ. Escutcheon clearly defined, lanceolate, with oblique sublamellar folds, devoid of radiate sculpture. Epidermis easily rubbed off, thin and light yellowish. Colour mostly white, sometimes inconspicuously irregularly concentrically banded with darker and lighter yellowish-brown. The interior is white, porcellanous, the margins smooth. Hinge-plate narrow and short; the right valve with two simple, slightly triangular cardinals, the anterior oblique, posteriorly a narrow and very oblique resilium. Left valve with a stout, bifid or trifid cardinal, in front of which is sometimes, but not always, a small lateral tooth. Ligament short, with very slender nymphæ. The anterior adductor scar is oblong, not very distinct, the posterior scar round or oval and

well impressed. Pallial sinus deep and broad, rounded in front, not coalescent at the base with the pallial line.

Dimensions.—Auckland specimen: length 14, height 11, diameter 6 mm. Elongated specimen from Stewart Island: length 25, height 17, diameter 10 mm.

Hab.—Stewart Island (type). There are also specimens in my collection from Auckland Harbour; 25 fathoms near Channel Island, Hauraki Gulf; Manukan Harbour; and Petane Harbour.

Type in the Colonial Museum, Wellington. To the synonyms mentioned by Hutton in his Pliocene Mollusca *T. decussata* has to be added, as there are specimens of *L. lintea* in the Colonial Museum labelled with Lamarck's name by Hutton. The specific name *Stangeri*, Desh., used for our species up to a few years back, had to be abandoned since Mr. Hedley kindly told me that Mr. E. A. Smith in his Marine Mollusca of the Maldive and Laccadive Archipelagoes (p. 627) had reduced *T. Stangeri* to a synonym of *T. carnicolor*, Hanley. The tracing of the figure of the latter, also sent by Mr. Hedley, at once convinced me that our *lintea* is quite a different species. About two years ago I sent a few specimens of our shell to Mr. E. A. Smith, of the British Museum, asking him to be good enough and tell me whether they were the same as *T. suborata*, Sow., and I am indebted to him for the following information:—"The bivalve is not a *Tellina* and quite distinct from *T. Stangeri*, Desh., and *suborata*, Sow. It has a different dentition and internal ligament which is not found in *Tellina*. It is near the genus *Leptomya*, A. Adams."

I had full confidence in Hutton's classification, and had never closely examined the hinge, or I should have seen that it is not a *Tellina*.

The shell is variable in length and colour, but the chief characters are constant in all specimens I have seen. The yellowish-brown and elongate form I know only from Stewart Island; specimens from the North Island are always white and nearly equilateral. This variability may no doubt account for the many names adopted for this species, but a worker in New Zealand may well be excused making a mistake now and again, for reasons pointed out by me in several places. Notwithstanding some unavoidable errors, conchologists will agree with me when I express the opinion that the work done by the late Captain F. W. Hutton was good and accurate. Few men could have done better under the prevailing circumstances.

Dentalium (Episiphon) arenarium, n.sp. Pl. XVIII, Fig. 11.

Shell arcuate, tapering, thin and shining, with a yellowish tinge. At the apex 10 equidistant rounded longitudinal ribs, which may increase to 12 or more towards the anterior end; interspaces distinctly longitudinally grooved, the number of these grooves being 5 to 7, with minute, fine, somewhat irregular growth-rings. When the aperture has been damaged the new growth of the shell may show but traces of the costæ, being minutely reticulate. Posterior and anterior section of shell circular. Apex with a central small tube inserted in the partly

closed orifice, with a slight dorsal direction. Length 19 mm.; diam. of aperture 2·5, diam. of apex ·75 mm.; tube, length 1, diam. ·4 mm.

Hab.—Dredged in 18 fathoms, Port Pegasus, Stewart Island, by Captain J. Bollons.

Type in my collection. My largest specimen has a length of 28 mm. This is a very interesting addition to the fauna of New Zealand. A species belonging to the same subgenus (*D. virgula*) was described by Hedley in 1903,[1] the specimens being obtained in 41 to 75 fathoms off the coast of New South Wales.

D. arenarium is, as far as I can ascertain, the first species of the subgenus known to possess well-pronounced longitudinal ribs. The little apical tube is present in all the eight specimens collected.

Mopalia australis, n.sp. Pl. XVIII, Figs. 12–12*a*.

Shell very small, elongately oval, with a blackish leathery girdle and sutural tufts. Anterior valve with 8 slits, teeth smooth. Intermediate valves with a rounded central posterior projection, insertion plates with one slit. Posterior valve depressed, with an oblique slit on each side and bisinuate in the middle behind. Girdle narrow, leathery, slightly broader on the sides, with a few sutural spicules. Colour probably ash-grey with a few longitudinal brown stripes on the jugum; inside bluish grey with a posterior brown margin. On the intermediate valves the tegmentum forms a narrow band by passing beyond the articulamentum. Sinus broad and slightly pectinate, the sutural plates narrowly rounded. The valve callus is quite distinct. Length 9, breadth 5·5 mm.; divergence 120°.

Hab —I am indebted to Captain J. Bollons for two specimens he collected at the Snares Islands (south of Stewart Island).

Type in my collection. Both examples are so much corroded that it is impossible to recognize the sculpture. The side-slits of the posterior valve leave no doubt about its generic position. This species is, as far as I know, the first of the genus recorded from the southern hemisphere.

Euspira venusta, n.sp. Pl. XVIII, Fig. 13.

Shell large, globose, white, imperforate, with two low spiral ribs round the umbilical region. Sculpture consists of close, unequal, slightly wavy lines, which are crossed by subequidistant fine growth-lines, interspersed with distant strong and flexuous radial folds, very likely marking periods of rest. Colour light bluish white, porcellanous. Spire conoidal, about one-fourth the height of the shell. Protoconch depressedly globose, formed by 2½ smooth and convex whorls. Whorls 5½, first slowly, then rapidly increasing, convex, the last whorl very large and rounded, base convex; two low and broadly rounded ribs encircling the umbilical region, the outer rib beginning at the lower third of the penultimate whorl and terminating at the junction of the outer with the basal lip. Suture not deep, on the last 1½ whorls with a milk-white broad inferior band. Mouth large, broadly ovate below,

[1] Mem. Austral. Mus., vol. iv, p. 328.

much excavated above by the penultimate whorl. Outer lip broadly rounded, thin and sharp, inner lip spreading as a thin and broad callus over the body-whorl, but forming a thick, white, and shining callus on the concave columella. Basal lip narrowly rounded, not produced. The columellar border is regularly S-shaped. Height 40, diam. 37 mm.

Hab.—This unique specimen was found by a fisherman near Cape Farewell, and came into Captain J. Bollons' possession. He most kindly presented it to me.

Type in my collection. This shell shows a peculiarity which I do not remember ever having seen in any other shell. Looking up from the base, there is visible inside the columellar border a perforation right up to the apex of the shell, having a diameter of about 3 mm. at the base; the columella does not form a vertical solid pillar, but is wound up in a spiral, leaving a free space in the centre. I use the generic name *Euspira*, Desor & Agassiz, 1837, as proposed by Harris in his Cat. Tert. Moll. Brit. Mus., pt. i, p 264.

This species is very nearly allied to the Pliocene shell *Sigaretus* (?) *Drewi*, Murdoch,[1] and has almost the same size, but is distinguished from it by being more globose, the periphery not flattened, the columella more concave, and the presence of two umbilical ridges.

The Rev. Mr. Webster first announced the occurrence of the genus as recent in New Zealand waters by enumerating amongst shells to be added to the fauna list *Sigaretus undulatus*, Hutton, from Cape Maria van Diemen [2] I have not seen his specimen, but it seems to be very different from the species now described. It is a highly interesting fact that New Zealand has two species still living, while the only other known recent species, *E. fluctuata*, Sow., inhabits the Philippines.

As my specimen is an empty shell, we remain for the present in ignorance with regard to operculum and animal.

EXPLANATION OF PLATE XVIII.

FIG. 1. *Lapparia Parki*, n.sp. × 2.
,, 2. ,, ,, Back view of protoconch, magnified.
,, 3. *Pleurotoma Pareoraensis*, n.sp. × 2.
,, 4. *Exilia Dalli*, n.sp. × 3.
,, 5. ,, ,, Protoconch, magnified.
,, 6. *Cardium Waitakiense*, n.sp. Hinge. Nat. size.
FIGS. 7, 7*a*. *Corneocyclas Aucklandica*, n.sp. Shell, magnified.
,, 7*b*, 7*c*. ,, ,, Cardinals of valves.
,, 8, 8*a*. *Venericardia Bollonsi*, n.sp. Shell, magnified.
FIG. 8*b*. ,, ,, Interior of right valve.
,, 9. *Tellina Spencei*, n.sp. Shell. Nat. size.
,, 9*a*, 9*b*. ,, ,, Interior of right valve.
,, 10. *Leptomya lintea*, Hutton. Shell, magnified.
,, 10*a*. ,, ,, ,, Elongated form, nat. size.
,, 10*b*. ,, ,, ,, Interior of left valve.
,, 10*c*. ,, ,, ,, Hinges of the two valves.
,, 11. *Dentalium arenarium*, n.sp. Magnified.
,, 12. *Mopalia australis*, n.sp. Much magnified.
,, 12*a*. ,, ,, Valves, much magnified.
,, 13. *Euspira venusta*, n.sp. Nat. size.

[1] Proc. Malac. Soc., vol. iii, p. 320.
[2] Trans. N. Zeal. Inst., vol. xxxvii, p. 281.